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SCHIEF HARDIN, LLP PATENT DEPARTMENT 6600 SEARS TOWER CHICAGO, IL 60606-6473			EXAMINER LIANG, LEONARD S	
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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* ULRICH HETZER, JAN KEUNECKE, TORSTEN SCHLAFF,  
and GEORGE G. GELFER

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Appeal 2009-003218  
Application 09/911,811  
Technology Center 2800

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Decided:<sup>1</sup> June 16, 2009

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Before JOSEPH F. RUGGIERO, MAHSHID D. SAADAT, and ROBERT  
E. NAPPI, *Administrative Patent Judges*.

RUGGIERO, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134 from the Final Rejection of claims 1-12, which are all of the pending claims. An oral hearing was

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<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

conducted on this appeal on June 9, 2009. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the Brief (filed April 16, 2008), the Answer (mailed June 25, 2008), and the Reply Brief (filed August 21, 2008) for the respective details. Only those arguments actually made by Appellants have been considered in this decision. Arguments which Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

#### *Appellants' Invention*

Appellants' invention relates to an apparatus for determining warm-up cycle data of an inkjet printhead in which warm-up data are stored in a first memory area of a memory. Data representative of at least two predetermined conditions are stored in a second memory area of the memory. A control unit is programmed to determine warm-up data for a fast start dependent on the sensed ambient temperature and at least two of the predetermined conditions. (*See generally* Spec. 5:4-19).

Claim 1 is illustrative of the invention and reads as follows:

1. An arrangement for determining data for a warm-up cycle of an ink jet printhead, said arrangement comprising:
  - an ink cartridge having an ink jet printhead and a drive unit connected to the ink jet printhead for heating, measuring a temperature of, and driving the ink jet printhead;
  - a control unit connected to the drive unit for controlling the drive unit;

a memory accessible by said control unit having a first memory area in which warmup data are stored in re-writable fashion, and a second memory area in which data representing at least two predetermined conditions are stored, said at least two predetermined conditions being selected from the group consisting of temperature-related conditions, history-related conditions and user-related conditions;

a sensor connected to said drive unit for measurement of ambient temperature; and

said control unit being programmed to implement at least one measurement of said ambient temperature with said sensor, and to determine warm-up data for a fast start, executed in less than 30 seconds, for a current warm-up cycle dependent upon said ambient temperature and dependent on said at least two predetermined conditions.

*The Examiner's Rejections*

The Examiner's Answer cites the following prior art references:

Smith	US 4,791,435	Dec. 13, 1988
Kneezel	US 5,107,276	Apr. 21, 1992
Berson	US 5,513,563	May 7, 1996
Bullock	US 5,812,156	Sep. 22, 1998

Claims 1, 10, and 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Smith in view of Kneezel.

Claims 2-4, 6-8, and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Smith in view of Kneezel and further in view of Bullock.

Claims 5 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Smith in view of Kneezel and Bullock and further in view of Berson.

### ISSUE

The pivotal issue before us in making the determination as to whether the Examiner erred in rejecting appealed claims 1-38 under 35 U.S.C. § 103(a) is whether Appellants have demonstrated that the Examiner erred in determining the obviousness to the ordinarily skilled artisan of combining Kneezel's teaching of using ambient temperature as a condition for determining warm-up data for a printhead with the printhead warm-up cycle control teachings of Smith.

### FINDINGS OF FACT

The record supports the following findings of fact (FF) by a preponderance of the evidence:

1. Smith discloses (Fig. 2A; col. 1, l. 35-col. 2, l. 12) a printhead warm-up cycle control system in which warm-up data is stored in a first memory area and data representative of at least two predetermined printhead conditions is stored in a second memory area.
2. Smith further discloses (Fig. 2A) that the predetermined printhead conditions can be selected from temperature-related conditions, history-related conditions, and user-related conditions.

3. Smith also discloses (col. 2, ll. 6-12) that the determination of the number of printhead warm-up pulses is based on multiple conditions.

4. Kneezel discloses (col. 8, ll. 1-30) the use of measured ambient temperature at start-up to maintain the operating temperature of the printhead substantially constant.

5. Kneezel further discloses (col. 12, ll. 15-31) that ambient temperature sensed data can be used in a printhead warm-up cycle lasting 1-4 seconds.

#### PRINCIPLES OF LAW

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966) (stating that 35 U.S.C. § 103 leads to three basic factual inquiries: the scope and content of the prior art, the differences between the prior art and the claims at issue, and the level of ordinary skill in the art). “[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). Furthermore,

‘there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness’ . . . [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.

*KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

## ANALYSIS

With respect to the Examiner's 35 U.S.C. § 103(a) rejection of appealed independent claim 1 based on the combination of Smith and Kneezel, Appellants' arguments in response assert a failure to set forth a prima facie case of obviousness since all of the claimed limitations are not taught or suggested by the applied prior art references. Appellants' arguments focus on the contention that, in contrast to the claimed invention, the printhead control system disclosed by Smith determines warm-up cycle data based only upon sensed temperature data. According to Appellants (App. Br. 4-12; Reply Br. 1-3), there is no disclosure in Smith of the determination of warm-up cycle data based on at least two predetermined conditions in addition to ambient temperature.

We do not find Appellants' arguments to be persuasive. As illustrated in Figures 2A-2B of Smith, multiple outputs from the read only memory 2b of microprocessor 2 to the pulse generator 24a of the printhead control logic circuit 24 are representative of stored data indicative of printhead conditions such as use profile, ink color, substrate location in addition to temperature. In addition, we find in Smith an explicit disclosure of the determination of the number of printhead warmup pulses being based on multiple conditions (FF 3). As described by Smith:

At low temperatures low energy pulses are sent to a nozzle to heat it. These pulses are below the threshold which would cause a drop of ink to be fired. *The number of pulses used in this*

*warm up process is based on the nozzle's temperature, the location of the nozzle in the substrate, the dye (color) in the nozzle, and the use profile of the nozzle.* (Emphasis added).

(Smith, col. 2, ll. 6-12).

We also find to be without merit Appellants' related argument (App. Br. 5; Reply Br. 2) that, since Smith illustrates in Figure 2A that information is only proceeding from the data processing section 2a to the read-only memory 2b where data related to other print conditions are stored, there is no utilization of anything other than sensed temperature in determining warm-up data. It is immaterial in the context of the claimed subject matter whether information is actually read by the processor 2a from the read-only memory 2b and further processed. In our view, there is an unambiguous disclosure in Smith of the processor 2a, at the very least, directing the flow of printhead multiple condition data to the pulse generator of the printhead control circuit which in turn uses the data to control the generation of warm up pulses. (Smith, col. 2, ll. 8-12).

We further find no error in the Examiner's finding (Ans. 5, 6, and 12-14) that Kneezel's teaching of using ambient temperature as a control factor to prevent printhead temperature fluctuation and to achieve fast starting would serve as an obvious enhancement to the system of Smith. As described by Kneezel at column 12, lines 20-23, fast starting is achieved within 1-4 seconds which is within the claimed "less than 30 seconds." (FF 5).

Appellants' arguments (App. Br. 6, 7, and 11; Reply Br. 2-3) attack Kneezel as not disclosing that conditions in addition to ambient temperature are used in determining warm-up data. We find such contention to be



unpersuasive since the Examiner has relied upon Smith, not Kneezel, for a teaching of multiple printhead condition data in addition to temperature condition data being used to determine printhead warm-up data. It is apparent from the Examiner's line of reasoning in the Answer that the basis for the obviousness rejection is the *combination* of Smith and Kneezel. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. *In re Keller*, 642 F. 2d 413, 425 (CCPA 1981); *In re Merck & Co., Inc.*, 800 F. 2d 1091, 1096 (Fed. Cir. 1986).

For the above reasons, since it is our opinion that the Examiner has established a prima facie case of obviousness based on the combination of Smith and Kneezel which has not been overcome by any convincing arguments from Appellants, the Examiner's 35 U.S.C. § 103(a) rejection of independent claim 1, as well as dependent claims 10 and 11 not separately argued by Appellants, is sustained.

We also sustain the Examiner's obviousness rejection of dependent claims 2-9 and 12 in which the Bullock and Berson references have been separately added to the combination of Smith and Kneezel to address, respectively, the ink cartridge identification and security module encryption code features of these claims. Appellants have made no separate arguments as to the patentability of these claims but, instead, have relied on arguments made against claim 1, which we found to be unpersuasive as previously discussed.

### CONCLUSION OF LAW

Based on the findings of facts and analysis above, we conclude that Appellants have not shown that the Examiner erred in rejecting appealed claims 1-12 for obviousness under 35 U.S.C. § 103.

### DECISION

The Examiner's decision rejecting claims 1-12, all of the appealed claims, under 35 U.S.C. § 103 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

ELD

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